

Abstract

A mutated expandase enzyme having higher activity on penicillin G is provided to produce phenylacetyl-7-aminodeacetoxycephalosporanic acid (7-ADCA), which mutated expandase enzyme has one or more amino
5 acid substitutions selected from M73T, S79E, V275I, L277K, C281Y, G300V, N304K, I305L and I305M.